

Amdt. dated August 12, 2004

Reply to Office action of June 14, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-23 (canceled).

Claim 24 (new). A motor vehicle access control system, comprising:

a transmitting/receiving station configured for mounting in or on a motor vehicle;

first and second transponders each disposed and configured to receive an interrogation code signal from said transmitting/receiving station and, upon receipt of said interrogation code signal, to transmit a coded answer signal;

each of said transponders having:

a carrier frequency generator disposed and configured to generate a carrier frequency, and a sub-carrier frequency generator disposed and configured to generate a sub-carrier frequency;

a first modulator disposed and configured to modulate the sub-carrier frequency with a response code signal that includes a transponder identification code

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and an instruction, thereby generating a modulated output signal;

a second modulator disposed and configured to modulate the carrier frequency with the modulated output signal, thereby generating the coded answer signal; and

an antenna disposed and configured to transmit the coded answer signal;

wherein said sub-carrier frequency generator of said first transponder generates a first sub-carrier frequency, said sub-carrier frequency generator of said second transponder generates a second-carrier frequency different from the first sub-carrier frequency, said first and second transponders utilize a common carrier frequency, and a transponder identification code of said first transponder is different from the transponder identification code of said second transponder; and

said transmitting/receiving station is disposed and configured to substantially simultaneously receive and demodulate the respective coded answer signals and to trigger an access authorization when a matching response code signal has been identified.

Claim 25 (new). The system according to claim 24, wherein said transmitting/receiving station is disposed and configured

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to divide the received coded answer signals between different frequency channels and to evaluate the respective received coded answer signals substantially in parallel.

Claim 26 (new). A method for accessing a motor vehicle, comprising:

transmitting an interrogation code signal from a transmitting/receiving station associated with the motor vehicle;

receiving and processing the interrogation code signal in at least a first and a second transponder and generating a response code signal including an identification code signal and an instruction, wherein the identification code signal of the first transponder is different from the identification code signal of the second transponder;

modulating a sub-carrier frequency with the response code signal, thereby generating a first modulated output signal, wherein the first transponder modulates its response code signal with a sub-carrier frequency that is different from the sub-carrier frequency with which the second transponder modulates its response code signal;

modulating a carrier frequency with the first modulated output signal, thereby generating a coded answer signal, and

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thereby utilizing a same carrier frequency with the first and second transponders;

substantially simultaneously transmitting the respective coded answer signals from at least the first and second transponders;

substantially simultaneously receiving and demodulating the respective coded answer signals at the transmitting/receiving stations; and

triggering an access authorization for the motor vehicle upon identification of a matching response code signal from at least one of the first and second transponders.

Claim 27 (new). The method according to claim 26, wherein the triggering step comprises unlocking a vehicle door of the motor vehicle.

Claim 28 (new). The method according to claim 26, wherein the triggering step comprises enabling a vehicle engine of the motor vehicle to be started.

Claim 29 (new). A motor vehicle access system, comprising:

at least a first and a second transponder, each transponder including:

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means for receiving and processing an interrogation code signal and means for generating a response code signal including an identification code signal and an instruction, wherein the identification code signal of the first transponder is different from the identification code signal of the second transponder;

means for modulating a sub-carrier frequency with the response code signal, thereby generating a first modulated output signal, wherein the first transponder is disposed and configured to modulate its response code signal with a sub-carrier frequency that is different from the sub-carrier frequency that the second transponder is disposed and configured to modulate its response code signal;

means for modulating a carrier frequency with the first modulated output signal, thereby generating a coded answer signal, wherein the first and second transponders utilize the same carrier frequency; and

means for transmitting the respective coded answer signals; and

a transmitting/receiving station associated with the motor vehicle, the transmitting/receiving station including:

means for transmitting the interrogation code signal; and

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means for receiving and demodulating the respective coded answer signals; and

means for triggering an access authorization for the motor vehicle upon identifying a matching response code signal from at least one of the first and second transponders.

Claim 30 (new). The method according to claim 29, further comprising means for unlocking a vehicle door upon triggering of the access authorization.

Claim 31 (new). The method according to claim 29, further comprising means for enabling a vehicle engine to be started upon triggering of the access authorization.